DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 15, 2010 has been entered. Claims 1 and 15 have been amended and claim 17 has been newly added. Therefore, claims 1-17 are currently pending for examination.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 and 17 recite “a control signal” in line 14 and line 4 respectively. It is unclear that it is the same “control signal” recited in line 9 of claim 1 or not. Claims 2-14 are also rejected since they depend from the rejected claim 1.

Claim 15 recites “the monitored property” and claim 16 recites “the property” without proper antecedent basis. For the purpose of examination, Examiner will assume as “the monitored parameter” and “the parameter” respectively.

Claim Rejections - 35 USC § 103

5. Claims 1-6, 8-12, 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Schuermann** (U. S. Patent No. 5,287,112) in view of **Charrat** et al. (**Charrat:** WO 03/052672: see US 6,905,074 as translation) and further in view of **Haffner** et al. (**Haffner**: US 2002/0149376).

Regarding claim 1, **Schuermann** discloses a communication apparatus for setting up a data connection between intelligent devices, comprising:

• a transmission oscillator (resonant circuit 28) for carrying out a contactless data exchange, said oscillator including a coil (Column 4 Lines 42-44 and 50-52);

• a communication element (control circuit 16) which is connected to the coil and the data processing component of an intelligent device and which emits search signals via the coil to receive a response from another intelligent device (Column 3 Lines 46-54);

Schuermann does not disclose:

• a measuring device for monitoring a property of the transmission oscillator which outputs a control signal when ascertaining a change of the monitored property; and

• a switching apparatus which is connected to the measuring device and the communication element and which switches on the communication element when it has received a control signal

from the measuring device.

However, the preceding limitations are known in the art of communications. **Charrat** discloses an RFID reader with an active standby mode comprising a measuring device for monitoring a property of the transmission oscillator which outputs a control signal when ascertaining a change of the monitored property (FIG. 3, 10 and Column 9 Lines 25-31, DETC3 measures the amplitude of the envelope signal of the transmitter coil and Column 9 Lines 38-55; microprocessor compares the amplitude with the threshold and deduces the presence of a contactless integrated circuit and Column 4, Lines 43-47: variations higher than a determined variation threshold); and a switching apparatus which is connected to the measuring device and the communication element and which switches on the communication element when it has received a control signal from the measuring device (Column. 11, Lines 7-12: saving on the current consumption of a reader using the invention. Therefore, one can easily see that part of the communication circuits can be powered down/switched off by the microprocessor on standby mode since sending identification request from the reader and receiving identification message from the tag do not need to be performing during the standby mode).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine **Schuermann** with **Charrat** in order to send the identification request from the reader after the non-contact IC enters the proximity of the reader and therefore, prolongs battery life and/or saves energy of the reader (**Charrat**: Column 11 Lines 1-12).

The combined embodiment does not explicitly disclose wherein the parameter of the transmission oscillator includes the frequency or impedance of the transmission oscillator in resonance.

However, in the same field of endeavor in proximity sensing, **Haffner** teaches a proximity sensor having a tuned circuit 1 with capacitor C and coil L (Fig. 1) and as a result of the approach of initiator or trigger 4, the impedance of the tuned circuit and the voltage changes (Paragraph [0031] [0014] & [0017]).

Therefore, it would have been obvious to the one of the ordinary skill in the art at the time of the invention was made to measure impedance in stead of the amplitude, as taught by **Haffner**, in the combined system of **Schuermann** and **Charrat**, as a known parameter to measure in the base process of proximity sensing with the predictable result of detecting the presence of the object in the predetermined distance.

Regarding claim 2, the combined apparatus of **Schuermann, Charrat** and **Haffner** teaches the apparatus of claim 1 as discussed above. **Schuermann** further discloses an assembly that is switchable to the transmission oscillator via a switch (the tuning circuit consisting of capacitor 56 and resistor 58 connects to resonant circuit 34 via switch 54 to form new resonant circuit 60), said assembly causing an increase in the bandwidth of the oscillating circuit (Column 5 Lines 47-59; one of ordinary skill in the art could combine this arrangement from the transponder with the interrogator since it is known in the art that interrogators can act as transponders and receive data from other transponders).

Regarding claim 3, the combined apparatus of **Schuermann, Charrat** and **Haffner** teaches the apparatus of claim 2 as discussed above. **Schuermann** further discloses that the assembly is a resistive element (the tuning circuit is a resistive element since it comprises a resistor).

Regarding claim 4, the combined apparatus of **Schuermann, Charrat** and **Haffner** teaches the apparatus of claim 1 as discussed above. **Schuermann** further discloses including an assembly (capacitor 52) switchable to the transmission oscillator via a switch (switch 50), said assembly causing a change in the resonant frequency of the transmission oscillator (Column 5 Lines 13-19).

Regarding claim 5, the combined apparatus of **Schuermann, Charrat** and **Haffner** teaches the apparatus of claim 4 as discussed above. **Schuermann** further discloses that the assembly causes a reduction in the resonant frequency (Column 5 Lines 13-15).

Regarding claim 6, the combined apparatus of **Schuermann, Charrat** and **Haffner** teaches the apparatus of claim 4 as discussed above. **Schuermann** further discloses that that the assembly comprises a capacitor (see above).

Regarding claim 8, the combined apparatus of **Schuermann, Charrat** and **Haffner** teaches the apparatus of claim 1 as discussed above but does not explicitly disclose the switching apparatus has a time controller for cyclically switching the measuring device on and off.

However, **Charrat** further discloses that pulses of 10 to 50 microseconds spaced out by 200ms (Column 7 Lines 17-37). Since the DETC circuit does not need to measure the amplitude between the pulses, one can easily see that it can be switched off for 200ms after detection of each pulse and switched on cyclically.

Therefore, it would have been obvious to the one of the ordinary skill in the art at the time of the invention was made to provide a switching apparatus with a time controller for cyclically switching the measuring device on and off in order to save the power more by turning

off the idling components of the circuit and turning on only when required.

Regarding claim 9, the combined apparatus of **Schuermann, Charrat** and **Haffner** teaches the apparatus of claim 8 as discussed above. **Charrat** further discloses that the time controller keeps the on state of the measuring device shorter than the off state (Column 7 Lines 17-27 and as modified in claim 8 above, pulse width i.e. the on state of the DETC is 10-50 microseconds long and off state will be 200ms).

Regarding claim 10, the combined apparatus of **Schuermann, Charrat** and **Haffner** teaches the apparatus of claim 8 as discussed above. The combination further discloses that the measuring device stores a measuring value obtained (**Charrat**: Column 9 Lines 37-55).

Regarding claim 11, the combined apparatus of **Schuermann, Charrat** and **Haffner** teaches the apparatus of claim 10 as discussed above. The combination further teaches the measuring device emits a control signal to the switching apparatus when a measuring value deviates from the average of the measuring values stored with the previous on phases (**Charrat**: Column 9 Lines 37-55)

Regarding claim 12, the combined apparatus of **Schuermann, Charrat** and **Haffner** teaches the apparatus of claim 8 as discussed above. While the combination does not expressly disclose that when the intelligent device is switched on, the communication element is initially on and the measuring device off, this is an obvious matter of design choice (the specification of the present application does not seem to give a reason for or an advantage to having this arrangement), which does not patentably distinguish the invention over the prior art.

Regarding claim 15, **Schuermann** discloses a communication element designed to use a

coil, which is part of a transmission oscillator, for automatically setting up a data connection with an intelligent device likewise having a communication element and a coil (see regarding claim 1 above). **Schuermann** does not disclose the method steps of:

• monitoring a parameter of the transmission oscillator by means of a measuring device;

• producing a control signal upon the occurrence of a change in the monitored property; and

• switching on the communication element by a switching apparatus due in response to the control signal.

However, the preceding limitations are known in the art of communications. **Charrat** discloses an RFID reader with an active standby mode comprising a measuring device for monitoring a property of the transmission oscillator which outputs a control signal when ascertaining a change of the monitored property (FIG. 3, 10 and Column 9 Lines 25-31, DETC3 measures the amplitude of the envelope signal of the transmitter coil and Column 9 Lines 38-55; microprocessor monitors/compares the amplitude with the threshold and deduces the presence of a contactless integrated circuit and Column 4, Lines 43-47: variations higher than a determined variation threshold); and a switching apparatus which is connected to the measuring device and the communication element and which switches on the communication element when it has received a control signal from the measuring device (Column. 11, Lines 7-12: saving on the current consumption of a reader using the invention. Therefore, one can easily see that part of the communication circuits can be powered down/switched off by the microprocessor on standby mode since sending identification request from the reader and receiving identification message from the tag do not need to be performing during the standby mode).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine **Schuermann** with **Charrat** in order to send the identification request from the reader after the non-contact IC enters the proximity of the reader and therefore, prolongs battery life and/or saves energy of the reader (**Charrat**: Column 11 Lines 1-12).

The combined embodiment does not explicitly disclose wherein the parameter of the transmission oscillator includes the frequency or impedance of the transmission oscillator in resonance.

However, in the same field of endeavor in proximity sensing, **Haffner** teaches a proximity sensor having a tuned circuit 1 with capacitor C and coil L (Fig. 1) and as a result of the approach of initiator or trigger 4, the impedance of the tuned circuit and the voltage changes (Paragraph [0031] [0014] & [0017]).

Therefore, it would have been obvious to the one of the ordinary skill in the art at the time of the invention was made to measure impedance in stead of the amplitude, as taught by **Haffner**, in the combined system of **Schuermann** and **Charrat**, as a known parameter to measure in the base process of proximity sensing with the predictable result of detecting the presence of the object in the predetermined distance.

Claim 17 is rejected for the same reason as claim 4.

6. Claims 7 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Schuermann, Charrat** and **Haffner** as applied to claim 1 and 15 above, and further in view of **Watkins** (U.S. Patent No. 6,317,027).

Regarding claim 7, the combined apparatus of **Schuermann, Charrat** and **Haffner** teaches the apparatus of claim 1 as discussed above. The combination does not teach that the measuring frequency of the measuring device is sweepable over a predetermined frequency domain.

However, the preceding limitation is known in the art of communications. **Watkins** discloses an auto-tuning RFID reader, wherein a range of frequencies are scanned when searching for devices/transponders (Figure 2 and Column 3 Lines 44-62). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the combined apparatus of **Schuermann, Charrat** and **Haffner** with the addition of sweeping over a frequency range as the motivation lies in **Watkins** that off-frequency tags/transponders can be more reliably detected (Column 2 Lines 13-23).

Regarding claim 16, the combined method of **Schuermann** in view of **Charrat** teaches the method of claim 15 as discussed above. The combination does not teach that the measuring frequency of the measuring unit is swept over a given frequency domain during the monitoring of the property.

However, the preceding limitation is known in the art of communications. **Watkins** discloses an auto-tuning RFID reader, wherein a range of frequencies are scanned when searching for devices/transponders (Figure 2 and Column 3 Lines 44-62). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the method of **Schuermann** in view of **Charrat** with the addition of sweeping over a frequency range as the motivation lies in **Watkins** that off-frequency tags/transponders can be more reliably detected (Column 2 Lines 13-23).

7. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Schuermann**, **Charrat** and **Haffner** as applied to claim 1 above, and further in view of **Flaxl** (U.S. Patent No. 5,491,715).

Regarding claim 13, the combination of **Schuermann**, **Charrat** and **Haffner** teaches the apparatus of claim 1 as discussed above. The combination does not disclose that the measuring device has a first oscillator device coupled at least temporarily with the coil for producing a first oscillation signal, and a second oscillator device for producing a second oscillation signal.

However, the preceding is known in the art of communications. **Flaxl** discloses an antenna tuning method and circuit, wherein a first oscillator device (antenna resonance circuit 18) and a second oscillator device (osc/xmit circuitry 44) are fed into a phase comparator to perform adjustments to the device based on feedback (Figure 7 and Column 5 Line 33 - Column 4 Line 6). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the apparatus of **Schuermann**, **Charrat** and **Haffner** with the circuit disclosed in **Flaxl** as the phase comparison circuit in **Flaxl** in addition to the change in magnitude in order to ascertain a change in the signal from the coil.

Regarding claim 14, **Schuermann**, **Charrat** and **Haffner** further in view of **Flaxl** teaches the apparatus of claim 13 as discussed above. The combination further teaches producing the control signal for the switching apparatus on the basis of a phase relation between the first and second oscillation signals or signals derived therefrom (in **Flaxl**, the phase comparator 60

outputs a signal to the control unit 50 which adjusts the antenna resonance circuit 18).

Contact Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nay Tun whose telephone number is (571) 270-7939. The examiner can normally be reached on Mon-Thurs from 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, Daniel Wu can be reached on (571) 272-2964. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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